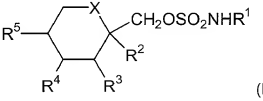
WHAT IS CLAIMED IS:

1. A method for treating or preventing the development of Type II diabetes mellitus in mammals afflicted with such condition with a therapeutically effective amount of a compound of the formula I:



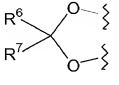
(I)

wherein

X is CH_2 or oxygen;

R^1 is hydrogen or alkyl; and

R^2, R^3, R^4 and R^5 are independently hydrogen or lower alkyl and, when X is CH_2, R^4 and R^5 may be alkene groups joined to form a benzene ring and, when X is oxygen, R^2 and R^3 and/or R^4 and R^5 together may be a methylenedioxy group of the following formula (II):



(II)

wherein

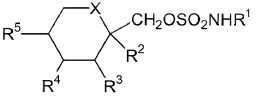
R^6 and R^7 are the same or different and are hydrogen, lower alkyl or are alkyl and are joined to form a cyclopentyl or cyclohexyl ring.

2. The method of claim 1 wherein the compound of formula (I) is topiramate.

3. The method of claim 1, wherein the therapeutically effective amount is from about 10 to 650 mg.

4. The method of claim 1, wherein the amount is of from about 16 to 325 mg once or twice daily.

5. A method for treating or preventing the development of Syndrome X (Insulin Resistance Syndrome, Metabolic Syndrome, or Metabolic Syndrome X) in mammals afflicted with such condition with a therapeutically effective amount of a compound of the formula I:



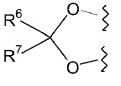
(I)

wherein

X is CH_2 or oxygen;

R^1 is hydrogen or alkyl; and

R^2, R^3, R^4 and R^5 are independently hydrogen or lower alkyl and, when X is CH_2, R^4 and R^5 may be alkene groups joined to form a benzene ring and, when X is oxygen, R^2 and R^3 and/or R^4 and R^5 together may be a methylenedioxy group of the following formula (II):



(II)

wherein

R^6 and R^7 are the same or different and are hydrogen, lower alkyl or are alkyl and are joined to form a cyclopentyl or cyclohexyl ring.

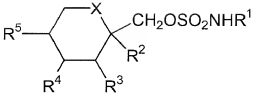
6. The method of claim 5 wherein the compound of formula (I) is topiramate.

7. The method of claim 5, wherein the therapeutically effective amount is from about 10 to 1000 mg daily.

8. The method of claim 5, wherein the therapeutically effective amount is from about 10 to 650 mg daily.

9. The method of claim 5, wherein the amount is of from about 16 to 325 mg once or twice daily.

10. A method for treating impaired oral glucose tolerance in mammals afflicted with such condition with a therapeutically effective amount of a compound of the formula I:



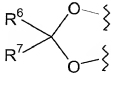
(I)

wherein

X is CH_2 or oxygen;

R^1 is hydrogen or alkyl; and

R^2, R^3, R^4 and R^5 are independently hydrogen or lower alkyl and, when X is CH_2, R^4 and R^5 may be alkene groups joined to form a benzene ring and, when X is oxygen, R^2 and R^3 and/or R^4 and R^5 together may be a methylenedioxy group of the following formula (II):



(II)

wherein

R^6 and R^7 are the same or different and are hydrogen, lower alkyl or are alkyl and are joined to form a cyclopentyl or cyclohexyl ring.

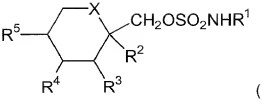
11. The method of Claim 10, wherein the compound of formula (I) is topiramate.

12. The method of claim 10, wherein the therapeutically effective amount is from about 10 to 1000 mg daily.

13. The method of claim 10, wherein the therapeutically effective amount is from about 10 to 650 mg daily.

14. The method of claim 10, wherein the amount is of from about 16 to 325 mg once or twice daily.

15. A method for treating or preventing the development of skin lesions associated with Type II diabetes mellitus or Syndrome X in mammals afflicted with such condition with a therapeutically effective amount of a compound of the formula I:



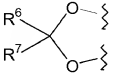
(I)

wherein

X is CH_2 or oxygen;

R^1 is hydrogen or alkyl; and

R^2, R^3, R^4 and R^5 are independently hydrogen or lower alkyl and, when X is CH_2, R^4 and R^5 may be alkene groups joined to form a benzene ring and, when X is oxygen, R^2 and R^3 and/or R^4 and R^5 together may be a methylenedioxy group of the following formula (II):



(II)

wherein

R^6 and R^7 are the same or different and are hydrogen, lower alkyl or are alkyl and are joined to form a cyclopentyl or cyclohexyl ring.

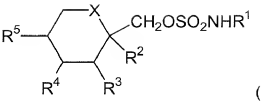
16. The method of Claim 15, wherein the compound of formula (I) is topiramate.

17. The method of claim 15, wherein the therapeutically effective amount is from about 10 to 1000 mg daily.

18. The method of claim 15, wherein the therapeutically effective amount is from about 10 to 650 mg daily.

19. The method of claim 15, wherein the amount is of from about 16 to 325 mg once or twice daily.

20. A method for improving defective insulin sensitivity in mammals afflicted with such condition with a therapeutically effective amount of a compound of the formula I:



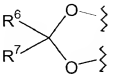
(I)

wherein

X is CH_2 or oxygen;

R^1 is hydrogen or alkyl; and

R^2, R^3, R^4 and R^5 are independently hydrogen or lower alkyl and, when X is CH_2, R^4 and R^5 may be alkene groups joined to form a benzene ring and, when X is oxygen, R^2 and R^3 and/or R^4 and R^5 together may be a methylenedioxy group of the following formula (II):



(II)

wherein

R^6 and R^7 are the same or different and are hydrogen, lower alkyl or are alkyl and are joined to form a cyclopentyl or cyclohexyl ring.

21. The method of Claim 20, wherein the compound of formula (I) is topiramate.

22. The method of Claim 20, wherein the therapeutically effective amount is from about 10 to 1000 mg daily.

23. The method of claim 20, wherein the therapeutically effective amount is from about 10 to 650 mg daily.

24. The method of claim 20, wherein the amount is of from about 16 to 325 mg once or twice daily.